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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,744	02/04/2004	Carl Frederick Edman	612,404-432	9786
34263	7590	03/31/2008		
O'Melveny & Myers LLP IP&T Calendar Department L.A.-1118 400 South Hope Street Los Angeles, CA 90071-2899				
EXAMINER				
FORMAN, BETTY J				
ART UNIT		PAPER NUMBER		
1634				
MAIL DATE		DELIVERY MODE		
03/31/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/772,744

**Applicant(s)**

EDMAN ET AL.

**Examiner**

BJ Forman

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 17 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 17 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**FINAL ACTION**

***Status of the Claims***

1. This action is in response to papers filed 21 December 2007 in which claims 1 & 17 were amended, claims 4-16, 18-20 were canceled and claim 21 was added. The amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 26 June 2007 are withdrawn in view of the amendments. Applicant's arguments have been thoroughly reviewed but are deemed moot in view of the amendments, withdrawn rejections and new ground for rejection. New grounds for rejection, necessitated by the amendments, are discussed.

Claims 1-3, 17, 21 are under prosecution.

***Priority***

2. The claims, as amended, are supported by the subject matter of priority document 08/760,933 (now U.S. Patent No. 6,652,808) e.g. Fig. 46 and related text. The effective filing date for the instant claims is the filing date of the '933 application i.e. 12/06/1996.

***Claim Interpretation***

3. The claims are drawn to a device for effecting photoelectric transport of charged materials. The claim defines the structural components of the device as including a photoactivatable substrate, attachment entities coupled to a first face of the substrate, liquid in contact with the first face, an electrode in contact with the liquid and a light source positioned to illuminate the substrate.

The preamble of the claim recited an intended use for the device i.e. "for effecting photoelectric transport of charged materials". The courts have stated that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be

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employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). As such, prior art teaching all the structural limitations of the claim is deemed to anticipate the instantly claimed device.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 17, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hafeman et al (Science, 1988, 240: 1182-1185).

Regarding Claim 1, Hafeman et al disclose a device for effecting photoelectric transport of charged materials (e.g. ions) in a liquid, the device comprising a photo-activatable substrate (silicon plate) capable of generating a photocurrent (page 1182, Fig. 1) attachment entities coupled to a first surface of the substrate (e.g. enzymes, page 1184 and Fig. 1), liquid in contact with the first surface (e.g. buffer, page 184 and Fig. 1), an electrode in contact with the liquid (page 1182 and Fig. 1), and a light source disposed to illuminate at least a portion of the substrate to induce photocurrent (e.g. LED Fig. 1).

Regarding Claims 2-3, Hafeman disclose the substrate is made of *n*- or *p*-type silicon (page 1182, middle column). The instant specification provides no guidance regarding the structural requirements of the substrate adaptation required for photo-current or photo electrochemical current. The specification does describe a preferred embodiment wherein the substrate comprises *n*-type silicon (e.g. ¶ 213). Furthermore, the substrate of Hafeman generates photocurrent and photo-electrochemical current for pH measurement (Fig. 5). Hence, Hafeman is deemed to teach the elements as required by the claim.

Regarding Claim 17, Hafeman et al disclose the device further comprising a counter electrode in contact with the device (i.e. the device comprises two electrodes, controlling electrode and reference electrode, page 1182, middle column).

Regarding Claim 21, Hafeman et al disclose the device wherein the light source is a spatially light activation light source (addressable light source, e.g. LED, Fig. 1).

6. Claims 1-3, 17, 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Song et al (U.S. Patent No. 5,567,302, filed 7 June 1995).

Regarding Claim 1, Song et al disclose a device for effecting photoelectric transport of charged materials (photogenerated charge carriers, Column 7, lines 21-28) in a liquid, the device comprising a photo-activatable substrate (chip, #32, Column 6, line 62-67) capable of generating a photocurrent (Fig. 1) attachment entities coupled to a first surface of the substrate (Abstract and Fig. 1), liquid in contact with the first surface (electrolyte solution #8 and Fig. 1), an electrode in contact with the liquid (#12/13 and Fig. 1), and a light source disposed to illuminate at least a portion of the substrate to induce photocurrent (LED, , #61//62/63 and Fig. 1).

Regarding Claims 2-3, Song et al disclose the substrate is made of *n*- or *p*-type silicon (Column 6, lines 62-67). The instant specification provides no guidance regarding the structural requirements of the substrate adaptation required for photo-current or photo electrochemical current. The specification does describe a preferred embodiment wherein the substrate comprises *n*-type silicon (e.g. ¶ 213). Furthermore, the substrate of Song generates photocurrent and photo-electrochemical current for electrochemical communication with the aqueous analyte (Column 7, lines 4-8). Hence, Song is deemed to teach the elements as required by the claim.

Regarding Claim 17, Song et al disclose the device further comprising a counter electrode in contact with the device (i.e. the device comprises two electrodes, controlling electrode and reference electrode, #12/13).

Regarding Claim 21, Song et al disclose the device wherein the light source is a spatially light activation light source (e.g. LED or fiber optic, column 7, lines 34-45 and Fig. 1).

### **Double Patenting**

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-3, 17, 21 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-38 of U.S. Patent No. 6,706,473. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to devices for photoelectric transport of charged materials. The claim sets merely differ in the arrangement of limitations within the claim sets. For example, instant claim 1 is drawn to the device comprising an electrode in contact with the liquid, while dependent claims 20 and 21 of the patent define a conductor/e.g. reference and auxiliary electrode disposed above the substrate. The patent further defines the conductor of claims 20 and 21 as liquid contacting (fig. 47). Therefore the claim sets are drawn to devices that are not patentably distinct.

#### Comments

9. No claim is allowed.

10. This rejection is reiterated from the previous office action. Applicant has not traversed the rejection. The rejection is herein maintained and made final.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BJ Forman  
Primary Examiner  
Art Unit 1634

/BJ Forman/  
Primary Examiner, Art Unit 1634